

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## A2CC Solving Exponential Equations with Variables in the Exponents

### Do Now:

Please fill in the blank space with  $>$ ,  $<$ , or  $=$

1.  $4^6$     $16^3$

2.  $9^5$     $27^3$

3.  $25^4$     $125^3$

### Classwork:

Solve for  $x$ .

1.  $2^{x+3} = 64$

2.  $9^{2x} = 3^{3x+1}$

3.  $4^x = 2^{3x+1}$

4.  $27^x = 9^{2x-1}$

5.  $9^{x+5} = 81^{2x+1}$

6.  $4^{3x} = 8^{x+1}$

$$7. \ 25^{x-2} = 125^{x-2}$$

$$8. \ \left(\frac{1}{2}\right)^x = 4$$

$$9. \ 5^{4x+2} = 1$$

$$10. \ \frac{1}{2^x} = 32$$

$$11. \ 9^{2x+2} = 243$$

$$12. \ 2^{2x+2} - 8^{x+2} = 0$$

$$13. \ \left(\frac{9}{16}\right)^x = \frac{27}{64}$$

$$14. \ \left(\frac{27}{8}\right)^x = \left(\frac{9}{4}\right)$$

$$15. \ 16^{x-2} = \left(\frac{1}{8}\right)^x$$